

MUNICIPAL DEPARTMENT

ORIGINAL FORMULÆ FOR THE WEIGHT OF BRIDGES.

BY H. G. TYRRELL, C.E., BOSTON.

RAILROAD BRIDGES.

All weight are per lineal foot of single track bridge. Steel only.

Live loads, two engines, 100 tons each, and 4,000 lb. per lineal foot of track, units 10,000 lb. and 12,000 lb. per square inch.

Deck-plate girder bridge..	100 + 9	1
" lattice " " ..	100 + 8	1
Half through plate girder bridge.....	300 + 12	1
Half through plate girder bridge, ties on shelf angle	200 + 8½	1
Half through plate girder bridge with solid steel floor.....	600 + 10	1
Riveted through truss bridge.....	400 + 6	1
Riveted deck truss bridge ties on top chord.....	200 + 7	1
Through pin bridge.....	400 + 5½	1
Deck pin bridge with stringers.....	400 + 6	1
Deck pin bridge ties on top chord.....	300 + 6	1

RAILROAD TRESTLES.

Loads as above.

Weight of spans as above.

" bents and bracing=9 lb. per square foot of side profile, from ground to base of rail.

ELECTRIC RAILROAD BRIDGES.

To carry 25 ton cars, or 2,000 lb. per lineal foot of tracks, units 10,000 lb. and 12,000 lb. per square inch.

Weight of steel per lineal ft. of single track bridge are for

Beam bridges.....	50 + 5	1
Deck plate girder bridges.	50 + 4½	1
Pony truss bridges.....	250 + 1.5	1
Through truss bridges.....	250 + 1.3	1

ELECTRIC RAILROAD TRESTLES.

Weight of spans as above.

" bents and bracing=6 lb. per square foot on side profile, from ground to base of rail.

HIGHWAY BRIDGES, WITH WOOD FLOORS.

Dead weight of floor=40 lb. per square foot. Live loads, 100 lb. per square foot,

DEBENTURES

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and units 10,000 lb. and 12,000 lb. per square inch.

Weights are per square foot of floor, and include steel only, without joists.

Girder bridge with sidewalks..	3 + ¾
" " without sidewalks.	3 + ¾
Truss " with sidewalks....	3 + ¼
" " without sidewalks.	5 + ¼

HIGHWAY BRIDGES WITH SOLID FLOORS.

Dead weight of floor=150 lb. per square foot.

Deck-plate girder bridges.....	3 + ¾
Half through bridges.....	3 + ¾
Truss bridge.....	3 + ¼

In the above 1 represents the length of span in feet, centre to centre of bearings.

CORK FOUNDATIONS.

In Germany cork is said to have been used with success in isolating the vibrations and consequent noise caused by machines installed in or near dwelling houses. A sheet made up of flat pieces of cork, in mosaic fashion, of corresponding size to the bed-plate of the machine, and held together by an iron frame, is laid under the machine. The source from which we gather this information also alludes to the isolation, by means of cork, of each bolt or connection between the bed-plate of the engine and its foundation, but does not describe in what manner such isolation is effected. It is, of course, apparent that the mere sandwiching of a sheet of cork between the bed-plate of a machine and its foundation would not necessarily

absorb troublesome vibrations, since each anchor bolt is a medium whereby the vibrations of the engine may be transmitted to its foundation, thence to the floor and walls of the building, unless effectively isolated from the same. Here this effective isolation is obtained by the use of cork sheeting remains to be explained. For our part, we should be inclined to rely upon a specially prepared foundation of extra area and solidity and to a careful balancing of the reciprocating parts of the machine.—Kuhlow.

Winnipeg has completed arrangements for the introduction of the meter system in connection with its water supply. A tax of 20 cents per thousand gallons will be levied upon citizens who use more than 45 gallons per room per day. The minimum of 35 gallons per room per day will be allowed if the house has not a full complement of modern conveniences. In future there will be no special lawn service rates. Col. Ruttan, the city engineer, states that there is almost as much water wasted through people leaving taps running, etc., as is legitimately used.

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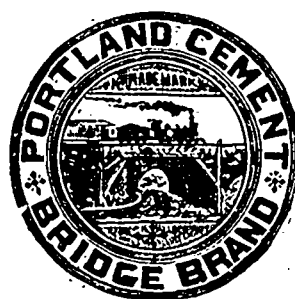
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